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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,946	02/28/2001	Harri Holma	P277099	3929

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EXAMINER	
SHAH, CHIRAG G	

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/763,946	HOLMA ET AL.	
	Examiner	Art Unit	
	Chirag G Shah	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-71* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 35, 38, 43, 46, 51, 52, 33, 60, 63, 68-71 rejected under 35 U.S.C. 102(e) as being anticipated by Haartsen.

Referring to claims 35, 52 and 68-71, Haartsen discloses in figures 1-3 of a communication system and method comprising: at least one transmitter/base station for transmitting [base station 14 in figure 1], on a shared channel [broadcast channel as disclosed in column 3, lines 58 to column 4, lines 24] on which at least two receivers/mobile station [the private radio base station serves a limited number of mobile terminals in a restricted area as disclosed in column 3, lines 58 to column 4, lines 24], data packets provided with a training sequence, wherein data packets addressed to at least one of different receiver groups are provided with different training sequences [as disclosed in figures 3, 4 and in column 3, lines 58 to column 4, lines 67, the base station transmits the beacon channel (BCH) including a frequency correction burst (FB) in the frequency correction channel (FCCH) and a synchronization burst (SB) in the synchronization channel (SCH). The GSM SB includes a 64 bit training sequence];

generating a channel estimate value in a first receiver of the at least two receivers on the basis of the training sequence [as disclosed in column 4,lines 8 to 67, the GSM SB includes a 64 bit training sequence , which is a known bit pattern used for a timing reference, and also used by a channel equalizer to estimate a channel model];

receiving data packets addressed to the first receiver [as discloses in column 3, lines 58 to column 4, lines 67, at power up, a GSM mobile terminal scans certain prescribed frequency bands for the GSM FB, the FB is transmitted form a GSM base station in a control channel that has the format shown in figure 2];

attempting to identify the received data packets [as discloses in column 3, lines 58 to column 4, lines 67, once the mobile terminal has found the GSM FB, the terminal searches for the GSM SB, which includes network and base station in\identity information, and time reference];

processing, in the first receiver, received data packets having a training sequence that the first receiver identifies [as disclosed in figure 4 and column 4, lines 25-67, the GSM SB includes 78 encrypted bits that encored a 25-bit data or speech information message. The 78 encrypted bits also includes 6 bits that reveal the network identity and base station color code, and 19 bits that indicate the TDMA frame number for the GSM base station being contacted. In addition, once the mobile terminal has been granted access to the network, the terminal reads he BCCH frame to obtain pertinent information about the cell in which it resides]; and

ignoring, in the first receiver, received data packets having a training sequence that the first receiver does not identify [as discloses in figure 8 and in column 8, lines 57 to column 9, lines 22, once the terminal finds FB, and if the terminal is unable to find the SB, it searches every

subsequent eleventh frame for an SB, the terminal will have to ignore the data packets until it finds SB in order to reveal the identify] as claim.

Referring to claims 38 and 55, Haartsen discloses in column 3, lines 66 to column 4, lines 55 and in figure 6 wherein the training sequence that the first receiver is to use on the shared channel is indicated to the first receiver before handover to the shared channel as claim.

Referring to claims 43 and 60, Haartsen discloses in column 3, lines 66 to column 4, lines 55 and in figure 6 wherein the training sequence is indicated to the first receiver via at least one of a common control channel and a parallel-dedicated channel before handover to the shared channel as claim.

Referring to claims 46, 51 and 63, Haartsen discloses in figure 3, column 4, lines 8 to 55 and in column 5, lines 18-37, wherein the communication system is a time division multiple access type of cellular radio network, the shared channel is a timeslot, and the data packets are radio bursts to be sent in the timeslot and include at least the training sequence and data as claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 36-42, 45, 53-59 and 62 rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen in view of Leung et al. (U.S. Patent No. 6,262,980), hereinafter Leung.

Referring to claims 36 and 53, Haartsen discloses in column 4, lines 30-47 that the GSM SB includes a 64 bit training sequence, which is known bit pattern used for timing reference, and is also used by a channel equalizer to estimate a channel model. Haartsen, however fails to disclose wherein attempting to identify the received data packets comprises comparing, in the receiver, the generated value of the channel estimate with a threshold value indicative of the quality of the channel, and wherein processing the received data packets is performed when the generated value of the channel estimate exceeds the threshold value, and ignoring the received data packets is performed when the generated value of the channel estimate is less than the threshold value. Leung teaches of dynamic resource allocation. Leung discloses in column 14, lines 13 to 61 that the SIR threshold for satisfactory signal detection could be from 10 to 15 dB, so a SIR threshold of 15dB was selected. For each packet transmission, if the SIR at the intended receiver exceeded the threshold the packet was considered to be successfully received. Thus, suggesting that if the SIR at the intended receiver is below the threshold, ignoring the received data packet. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Haartsen to include the generated channel estimate value to be SIR as taught by Leung in order to reduce interface and increase quality for packet transmission.

Referring to claims 37 and 54, Leung discloses in the abstract and in claim 4 wherein the generated channel estimate value is a signal interference ratio.

Referring to claims 39 and 56, Haartsen discloses in column 3, lines 66 to column 4, lines 55 wherein the first receiver received allocated time both on the shared channel and at least one parallel, dedicated channel as claim.

Referring to claims 40 and 57, Haartsen discloses in column 3, lines 66 to column 4, lines 55 wherein the at least one parallel dedicated channel is a control channel as claim.

Referring to claims 41 and 58, Haartsen discloses in column 3, lines 66 to column 4, lines 55 wherein each parallel-dedicated channel uses a different training sequence as claim.

Referring to claims 42 and 59, Haartsen discloses in column 3, lines 66 to column 4, lines 55wherein the first receiver uses, on the shared channel, the same training sequence as on the at least one parallel dedicated channel as claim.

Referring to claims 45 and 62, Leung discloses in column 13, lines 57 to column 14, lines 13-61 wherein the threshold value (15 dB) for the channel estimate is generated on the basis of a data packet received on the at least one parallel dedicated channel.

5. Claims 44, 47-50, 61, and 64-67 rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen in view of Moulsley (U.S. Patent No. 6,407,993).

Referring to claims 44 and 61, Haartsen fails to disclose of performing a CRC on identified data packets of the shared channel before processing. Moulsley teaches of a flexible two-way telecommunication system. Moulsley discloses in figures 2, 3 and specifically in column 4, lines 46-63 of performing a CRC on data packets before processing. Therefore, it would have been obvious to one of ordinary skills in the art to modify the teachings of Haartsen to include performing a CRC on data packets before processing in order to provide for error detection and maintain high level of QoS for data packet processing.

Referring to claims 47 and 64, Haartsen discloses in figure 1 and in column 3, lines 15 to column 4,lines 24 wherein a TDD principle is used on a carrier of the shared channel as claim as claim.

Referring to claims 48 and 65, Haartsen discloses in column 4, lines 8 to 67 wherein the first receiver attempts to identify a radio burst by the training sequence. Haartsen fails to disclose wherein a plurality of radio burst are simultaneously sent in a timeslot of the shared channel based on CDMA principle using different spreading codes, and wherein different training sequences are used in radio bursts for at least one of different receivers and different receiver. Moulsley teaches of a flexible two-way telecommunication system. Moulsley discloses in column 10, lines 4-61 to allow a secondary station at a cell boundary to distinguish signals form different primary stations, it will be desirable to use different orthogonal codes. This could be achieved by use of different spreading code. In addition, Moulsley discloses in figure 2 and in claim 10 that different training sequences are embedded in data bursts. Therefore, it would have been obvious to one of ordinary skills in the art to modify the teachings of Haartsen to include performing different spreading codes and different training sequences are used in radio burst as taught by Moulsley in order to avoid interference and distinguish signals from different stations.

Referring to claims 49 and 66, Haartsen discloses in column 4, lines 8 to 67 wherein the first receiver attempts to identify a radio burst by the training sequence. Haartsen fails to disclose wherein the first receiver simultaneously receives a plurality of radio burst with different spreading codes and accepts at least one radio burst having a training sequence that the first receiver identifies. Moulsley teaches of a flexible two-way telecommunication system.

Moulsley discloses in column 10, lines 4-61 to allow a secondary station at a cell boundary to distinguish signals form different primary stations, it will be desirable to use different orthogonal codes. This could be achieved by use of different spreading code. In addition, Moulsley discloses in figure 2 and in claim 10 that different training sequences are embedded in data bursts. Therefore, it would have been obvious to one of ordinary skills in the art to modify the teachings of Haartsen to include performing a different spreading codes and different training sequences are used in radio burst and accepts one identifiable radio burst as taught by Moulsley in order to avoid interference and distinguish signals from other stations.

Referring to claims 50 and 67, Haartsen discloses in column 4, lines 8 to 67 wherein the first receiver attempts to identify a radio burst by the training sequence. Haartsen fails to disclose that the receiver attempts to identify a radio burst with the spreading code in addition to the training sequence. Moulsley teaches of a flexible two-way telecommunication system. Moulsley discloses in column 10, lines 4-61 to allow a secondary station at a cell boundary to distinguish signals form different primary stations, it will be desirable to use different orthogonal codes. This could be achieved by use of different spreading code. Therefore, it would have been obvious to one of ordinary skills in the art to modify the teachings of Haartsen to include performing a different spreading codes to identify a burst as taught by Moulsley in order to avoid interference and distinguish signals from different primary stations.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703)305-3988, (for formal communications intended for entry)

Or:

(703)305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs
September 3, 2004

Ajit Patel
Primary Examiner